

ENTOMOLOGY.—*New species of Olethreutidae from Illinois (Lepidoptera)*. J. F. GATES CLARKE, U. S. Bureau of Entomology and Plant Quarantine.

This paper is devoted to the description of species of olethreutid moths collected by Murray O. Glenn, of Henry, Ill. Only six species are treated here, although many more, chiefly represented by uniques, are in hand. Mr. Glenn deserves great credit for contributing so much to our knowledge of host associations and of the Microlepidoptera of the region. The photographs of the moths' wings were taken by Robert Bonde, U. S. Department of Agriculture. The drawings are by the author. Types of all the species are deposited in the U. S. National Museum, and paratypes are deposited in the National Museum and in Mr. Glenn's collection.

*Eucosma uta*, n. sp.

Figs. 1, 1a, 1b

Alar expanse, 20–22 mm.

Labial palpus with second segment very light buff, sprinkled with a few grayish scales; third segment very short, dark gray, buff-tipped. Head ochraceous-buff, face buff. Antenna ochraceous-buff with fuscous spot above on some segments; scape fuscous above. Thorax and forewing light buff; thorax strongly overlaid with fuscous and ochraceous-buff almost to the complete suppression of the ground color; apex of tegula light buff; basal two-fifths of forewing fuscous, except costal third, with considerable olivaceous scaling on basal angle; from slightly before middle of costa an outwardly slanting fuscous fascia extending to and broadening at tornus is preceded and followed by olivaceous; entire costa strigulated with short alternating pale buff and fuscous dashes, the former with a faint metallic luster; costal fold of male extending slightly beyond basal third; in terminal third, and in the dark fascia, several narrow metallic streaks; ocelloid patch obsolete, mainly indicated by two, short, metallic bars and a pair of faintly indicated longitudinal, black lines; cilia olivaceous strongly irrorate with blackish-fuscous basally. Hind wing fuscous; cilia buff with a grayish subbasal line, except in area of basal angle where they are almost wholly grayish. Legs buff overlaid and banded with fuscous. Abdomen buff below, fuscous above.

*Male genitalia*.—Harpe as figured. Uncus prom-

inent, broad, rounded apically. Socii moderately long, fleshy, pendant.

*Female genitalia*.—Ovipositor with an anterior, ventral, prominent, evaginated opening. Remainder of genitalia as figured.

*Type*.—U.S.N.M. no. 61481.

*Type locality*.—Putnam County, Ill. (July 10, 1939).

*Food plant*.—Unknown.

*Remarks*.—Described from the type male and two female paratypes all from the same locality. The females are dated "13. viii. 45" and "5. viii. 47."

The nearest relative of *uta* appears to be *E. atomosana* (Walsingham), from which it differs by the presence of the dark basal patch and the absence of the white costal area and the semi-metallic spotting of the forewing. In genitalia *uta* differs from *atomosana* by the evenly rounded uncus, more slender socii, and broader neck of harpe. No females of *atomosana* are available for a comparison of the genitalia.

*Epiblema naoma*, n. sp.

Figs. 2, 2a, 2b

Alar expanse, 14–18 mm.

Labial palpus with second segment buff, outwardly marked with grayish fuscous; third segment fuscous, buff-tipped. Antenna grayish fuscous with paler, narrow annulations. Head with admixture of buff and fuscous, varying greatly in different specimens, some with the lighter color absent. Thorax marked with three pairs of alternating dark and light transverse bands; in some specimens the dark bands are blackish fuscous and the light bands vary from buff to pale vinaceous. Forewing blackish fuscous; outer margin of basal patch outwardly oblique from costa to middle of wing then straight to dorsum; basal patch followed by a pale transverse shade from dorsum to costa, broader on dorsum; this pale shade varies from buff to pale vinaceous, being more pronounced in the males, and is followed by an outwardly oblique, narrow bar of the ground color; this in turn is followed by a pale terminal portion of the wing; slightly before apex a transverse dash of the ground color, frequently interrupted by pale scaling, extends to vein 5; costa marked for its entire length with alternating light and dark spots; costal fold of male extending to middle of costa; terminal half

of wing marked with dull leaden-metallic scales; cilia dull leaden-metallic preceded by a fine, dark subbasal line. Hind wing pale to dark fuscous with base, in males, almost white; cilia light fuscous with darker subbasal line. Legs buff to pale vinaceous the ground color mostly obscured by fuscous suffusion and banding. Abdomen consisting of alternating dark and light bands the extent of each varying with the specimen.

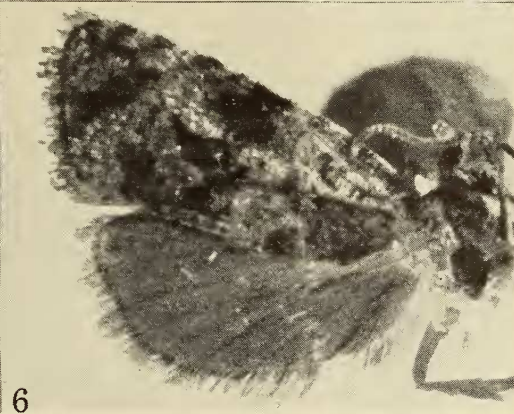
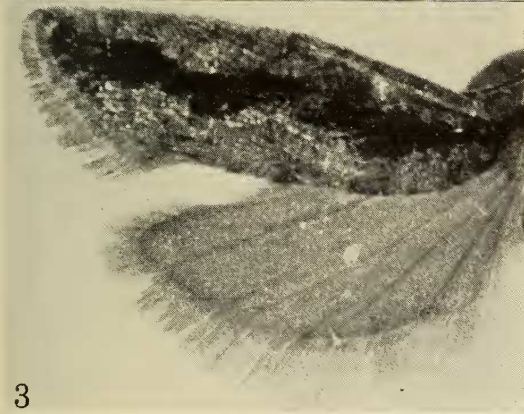
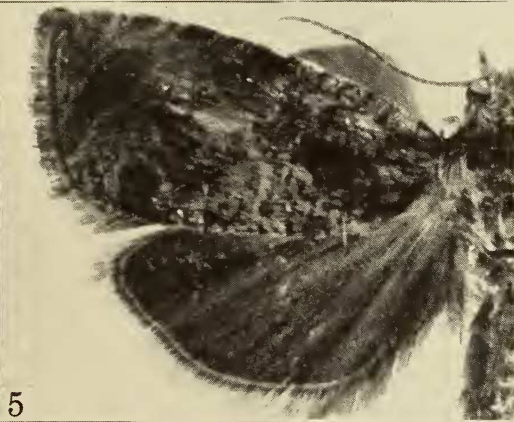
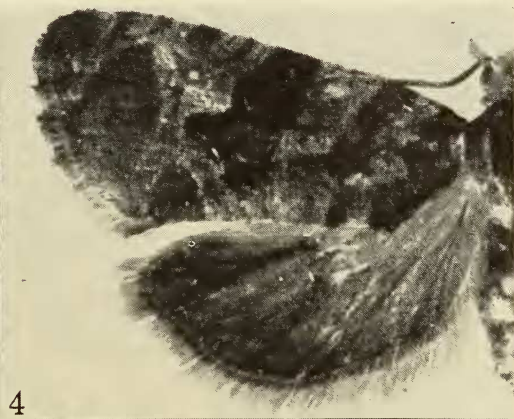
*Male genitalia*.—Harpe as figured. Uncus bilobed. Clasper strong, sharply pointed.

*Female genitalia*.—Ovipositor not shown; remainder as figured.

*Type*.—U.S.N.M. no. 61482.

*Type locality*.—Putnam County, Ill. (June 25, 1950).

*Food plant*.—*Ratibida pinnata* (Vent.) Barnhart (roots).



FIGS. 1-6.—New Olethreutidae from Illinois: Left wings. (See explanation at end of text.)

*Remarks.*—Described from the type male and 8 male and 9 female paratypes all from the type locality. Dates of emergence range from April 28 to June 25 (1948–1950).

As indicated in the description, *naoma* is an extremely variable species, difficult to describe. The wings figured represent an average male, but many of these exhibit much more light scaling. In the females the markings are usually more pronounced and clear-cut, and the majority of them appear much darker than the males. In general appearance and genitalia this species is nearest *E. iowana* McDunnough.

T. N. Freeman, of the Canadian National Museum, has kindly compared some of the specimens of *naoma* with McDunnough's type of *iowana* and remarks as follows: *E. iowana* has "apex of uncus truncate; ventral edge of sacculus strongly arcuate; neck of harpe much deeper excavated ventrally so that the ventral part of the cucullus projects well beyond; juxta arcuate dorsally." *E. naoma* has "apex of uncus bilobed; ventral edge of sacculus less strongly arcuate; neck of harpe shallowly excavated; juxta more truncate dorsally." He further states that in *iowana* "outer edge of basal band runs straight to radius then obtusely angled to costa" while in *naoma* "outer edge of the basal band is irregular and bends in the middle of the wing. Maculation is more distinct and the hind wings are whiter at base, otherwise quite similar."

*Epinotia atristriga*, n. sp.

Figs. 3, 3a, 3b

Alar expanse, 13–19 mm.

Labial palpus sordid whitish suffused with gray exteriorly on second segment; third segment gray. Antenna dark gray with narrow, paler annulations. Head gray, the scales tipped with sordid white. Thorax and forewing ground color gray with scales tipped with sordid white; tegula with black spot at base; forewing with longitudinal, median, irregular black streak for entire length; on each side of the median streak, particularly dorsally, sordid-white scaling; costal fold of male extending to basal two-fifths and containing expansible, whitish hair pencil; outer three-fifths of costa with some obscure dark spots; cilia gray with dark subbasal line. Hind wing pale grayish-fuscous; cilia lighter with dark subbasal line. Legs dark gray with pale annulations. Abdomen dark gray, somewhat lighter ventrally and anal tuft with ochreous tint.

*Male genitalia.*—Harpe as figured. Uncus long, curved, bifid. Socii long, narrow, dilated distally.

*Female genitalia.*—Ovipositor not shown, remainder as figured.

*Type.*—U.S.N.M. no. 61483.

*Type locality.*—Putnam County, Ill. (March 17, 1945).

*Food plant.*—Unknown.

*Remarks.*—Described from the type male and 14 male and 6 female paratypes all from the type locality. Dates range from March 17 to April 12 (1938–1946).

Formerly confused with *E. vertumnana* (Zeller), to which it is closely related, but differing from it by the uninterrupted dark median streak and much less white scaling dorsally on forewing. The chief differences in the male genitalia are the much broader base of sacculus and narrower, longer spine cluster of *vertumnana*.

*Polychrosis sambuci*, n. sp.

Figs. 4, 4a, 4b

Alar expanse, 10–13 mm.

Labial palpus pinkish buff; second segment with indistinct subterminal fascia and small basal spot fuscous. Antenna fuscous with paler annulations. Head pinkish buff shading to brownish posteriorly and with a fuscous spot on each side. Thorax cinnamon-buff; posterior tuft cinnamon; base of tegula and median transverse fascia fuscous. Forewing with basal two-fifths leaden-metallic the basal patch almost obliterated by this color and only indicated by a fine blackish-fuscous transverse line near base and another, outwardly curved fascia of the same color at one-fourth nearly obscured by cinnamon-buff scales; from slightly before middle of costa to middle of dorsum an outwardly curved, irregular, blackish-fuscous fascia with a prominent tooth extending well toward termen; dorsal half of this fascia largely overlaid with cinnamon-buff; on tornus a blackish-fuscous spot, overlaid with cinnamon-buff, and bordered by an inverted V-shaped leaden-metallic mark; between this and a smaller, similarly colored apical spot, a large blotch, also similarly colored, covers most of the subterminal area; on apical half of costa several alternating dark and light dashes; cilia mostly leaden-metallic with some cinnamon buff in tornal area. Hind wing fuscous; cilia grayish with dark subterminal line. Legs buff to pinkish buff overlaid and banded with blackish fuscous. Abdomen fuscous above, buff beneath.

*Male genitalia*.—Harpe as figured. Uncus broad, rounded. Socii small pads with long, coarse setae. Aedeagus slender, with curved distal end and single lateral tooth.

*Female genitalia*.—Ovipositor not shown; remainder as figured.

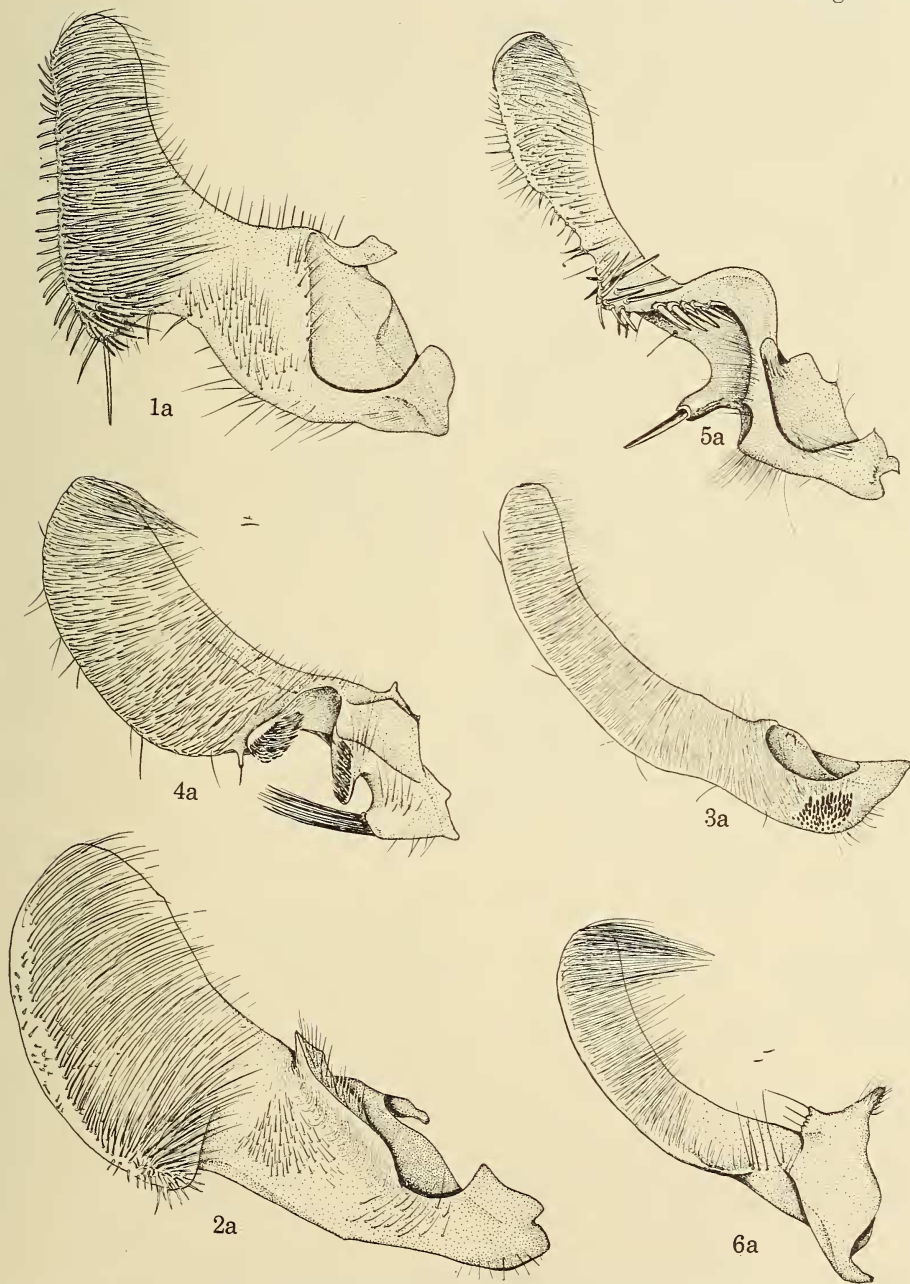
*Type*.—U.S.N.M. no. 61486.

*Type locality*.—Putnam County, Ill. (July 3, 1943).

*Food plant*.—*Sambucus canadensis* L.

*Remarks*.—Described from the type male and 5 male and 8 female paratypes all from the type locality. The dates range from May 20 to September 4 (1939–1949).

This species is difficult to distinguish from *P. monotropana* Heinrich on color and markings except that in *monotropana* the dark markings are clearer and the leaden scaling is smoother.



FIGS. 1a-6a.—New Olethreutidae from Illinois: Left harpes. (See explanation at end of text.)

The genitalia immediately distinguish the two. The aedeagus of *monotropana* is smooth, that of *sambuci* is armed with a single tooth. The fluted genital plate of *sambuci* immediately separates it from *monotropana*.

**Exartema comandranum, n. sp.**

Figs. 5, 5a, 5b

Alar expanse, 15–18 mm.

Labial palpus pale buff; second segment with small fuscous spot exteriorly at base and with smoky suffusion exteriorly at apex; third segment almost wholly overlaid with fuscous. Antenna blackish fuscous overlaid with olivaceous almost entire length above. Head fuscous with some tawny scaling in front. Thorax and basal three-fifths of forewing olivaceous, the latter with some admixture of buff; tegula with suffused fuscous spot at base; posterior tuft of thorax dark vinaceous-tawny; basal patch almost obscured by the olivaceous scaling and reduced to an oblique mark from basal angle to slightly before middle of cell; outer two-fifths of forewing dark vinaceous-tawny crossed by several irregular leaden-metallic lines; from middle of costa a short, wedge-shaped, outwardly oblique, blackish-fuscous dash, the dark color almost obscured by vinaceous-tawny scales; on tornus a similarly colored spot; from vein 8, slightly beyond end of cell, to termen at vein 5, an oblique bar of the same color; entire costa marked with short, alternating dark and light strigulae; cilia leaden-metallic mixed with dark vinaceous tawny and fuscous and preceded by a fine blackish-fuscous and tawny line. Hind wing light mummy brown; cilia fuscous mixed with buff with a dark subbasal line. Legs buff overlaid and banded with fuscous. Abdomen fuscous this color nearly obscured by buff beneath.

*Male genitalia*.—Harpe as figured. Uncus broad basally, tapering to a slender point. Socii small oval pads.

*Female genitalia*.—Ovipositor not shown; remainder as figured.

*Type*.—U.S.N.M. no. 61484.

*Type locality*.—Putnam County, Ill. (June 11, 1942).

*Food plant*.—*Comandra umbellata* (L.) Nutt.

*Remarks*.—Described from the type male and 12 male and 4 female paratypes all from the type locality. Dates of both reared and field collected specimens range from May 27 to July 31 (1941–1943).

In appearance *comandranum* reminds one of *merrickanum* Kearfott but lacks the conspicuous

subterminal spot and long, pale, oblique line of that species. The genitalia, however, indicate a closer affinity with *E. foedanum* (Clemens) from which it differs by the shorter digitus and longer, stouter spine of Spc<sup>2</sup>, and the presence of a small but well-defined signum.

**Endothenia microptera, n. sp.**

Figs. 6, 6a, 6b

Alar expanse, 10–12 mm.

Labial palpus buff with some fuscous shading exteriorly on second segment; third segment almost wholly fuscous. Antenna fuscous; scape paler. Head grayish with some light brown mixed on vertex. Thorax and ground color of forewing grayish fuscous with darker and lighter markings, the whole appearing mottled; thorax and tegula with narrow, transverse, buff bands; posterior tuft of thorax fuscous; basal patch, an irregular, median, transverse fascia and a slightly curved, transverse bar from vein 8, near end of cell, to vein 5 before termen, fuscous; dark markings separated by leaden-metallic fasciae and spots; on dorsum, about middle of wing, a leaden-metallic spot preceded and followed by a slender buff line; costa with three pairs of short buff strigulae before the dark transverse fascia and three pairs of similar strigulae beyond; cilia leaden-metallic preceded by a narrow fuscous subbasal line. Hind wing fuscous; cilia grayish with dark subbasal line. Legs buff, overlaid and banded with fuscous. Abdomen fuscous above, buff beneath.

*Male genitalia*.—Harpe as figured. Uncus very broad, tuberculate. Cornutus one, small, with large bulbous base.

*Female genitalia*.—Ovipositor not figured; remainder as shown.

*Type*.—U.S.N.M. no. 61485.

*Type locality*.—Putnam County, Ill. (August 14, 1949).

*Food plant*.—Unknown.

*Remarks*.—Described from the type male and 3 male and 4 female paratypes all from the same locality. Dates range from June 12 to September 2 (1946–1949).

In size *microptera* approaches *E. conditana* (Walsingham), to which it is most nearly related. The markings of *microptera* are more pronounced than those of *conditana*, and the former has six pairs of fine, well-defined, buff strigulae on costa of forewing not found in *conditana*. The uncus of *microptera* is about twice as broad as that of *conditana*, the aedeagus is broader and shorter, and the cornutus is less than half the size.

EXPLANATION OF FIGURES

FIGS. 1-1b.—*Eucosma uta*, n. sp.: 1, Left wings; 1a, left harpe; 1b, ventral view of female genitalia with ovipositor removed.

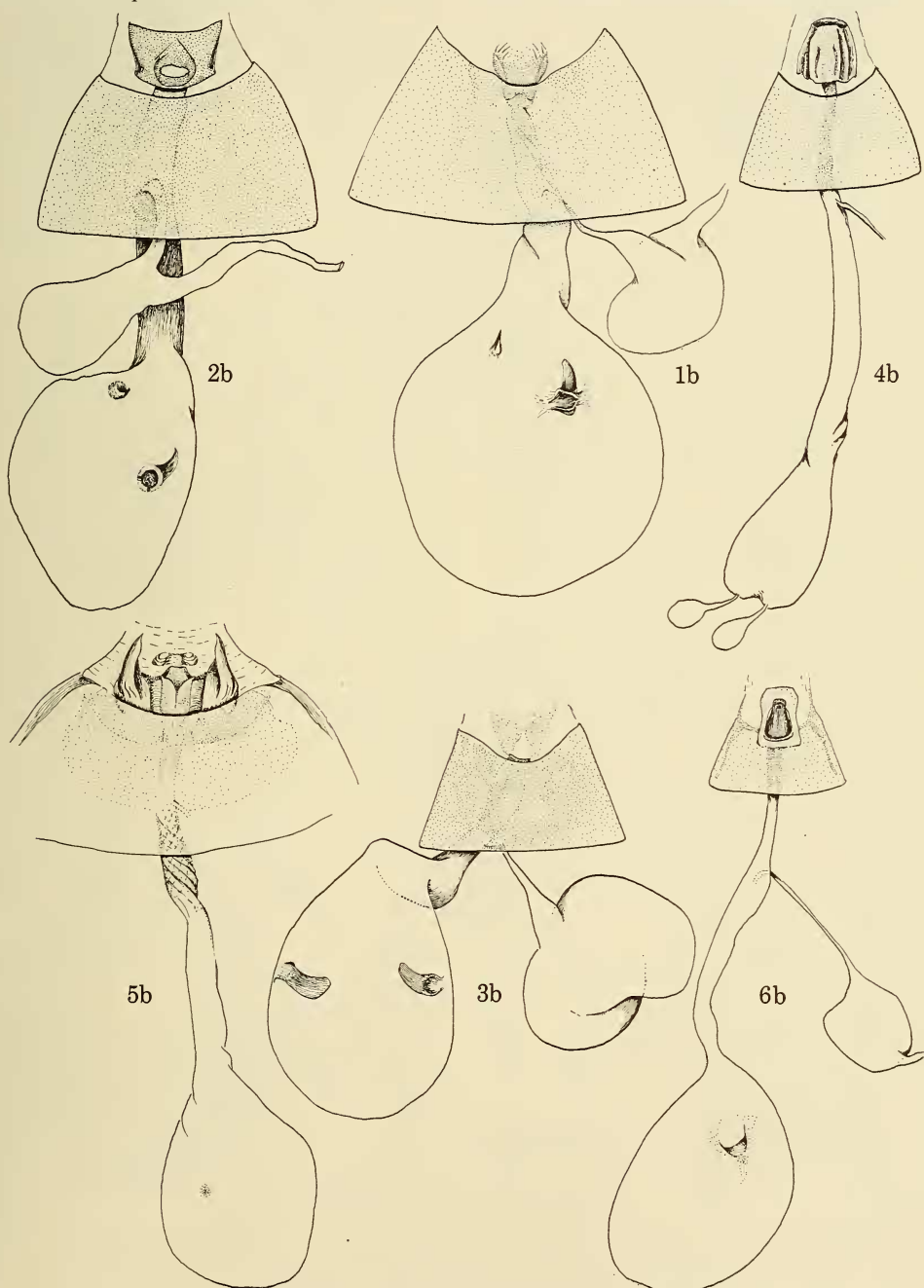
FIGS. 2-2b.—*Epiblema naoma*, n. sp.: 2, Left wings; 2a, left harpe; 2b, ventral view of female genitalia with ovipositor removed.

FIGS. 3-3b.—*Epinotia atristriga*, n. sp.: 3, Left wings; 3a, left harpe; 3b, ventral view of female genitalia with ovipositor removed.

FIGS. 4-4b.—*Polychrosis sambuci*, n. sp.: 4, Left wings; 4a, left harpe; 4b, ventral view of female genitalia with ovipositor removed.

FIGS. 5-5b.—*Exartema comandranum*, n. sp.: 5, Left wings; 5a, left harpe; 5b, ventral view of female genitalia with ovipositor removed.

FIGS. 6-6b.—*Endothenia microptera*, n. sp.: 6, Left wings; 6a, left harpe; 6b, ventral view of female genitalia with ovipositor removed.



FIGS. 1b-6b.—New Olethreutidae from Illinois: Female genitalia. (See explanation at end of text.)